

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1-86. (Cancelled)

87. (New) A method for processing a metal body, comprising:

turning a metal structure of the metal body into a finer grain structure by forming a low deformation resistance region which traverses the metal body by locally lowering the deformation resistance of a metal body which extends in one direction and by deforming the low deformation resistance region by shearing, said deforming the low deformation resistance region by shearing including imparting rotational motion which allows the rotation of one non-low deformation resistance region relative to another non-low deformation resistance region; and

forming a non-low deformation resistance region along one side periphery of the low deformation resistance region by increasing the deformation resistance which is lowered in the low deformation resistance region using a non-low deformation resistance region forming device,

wherein the metal body is moved along the extending direction and, at the same time, the non-low deformation resistance region is formed by the non-low

deformation resistance region forming device along side peripheries of the low deformation resistance region at a downstream side in the moving direction; and

wherein the non-low deformation resistance region forming device includes a cooling device which rapidly cools the metal body.

88. (New) A method for processing a metal body according to claim 87, further comprising:

performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance.

89. (New) A method for processing a metal body according to claim 87, wherein the metal body is subjected to a carburizing treatment.

90. (New) A method for processing a metal body according to claim 87, wherein the low deformation resistance region traverses the metal body, and one of non-low deformation resistance regions of the metal body which sandwich the low deformation resistance region, has a position thereof fluctuated relative to another non-low deformation resistance region is fluctuated thus deforming the low deformation resistance region by shearing.